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JOURNAL
AND
PHOTOGRAPHIC
ENLARGER.
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NOTICES.

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NOTES.

Magic Lantern Journal Annual, 1897-8.—We are requested by our publishers to announce that the publication of this Annual has been postponed until October 1st, owing to several firms being unable to supply their blocks as early as anticipated. The literary portion is at press, and we promise it will be a very interesting book.

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Low Flashing Point of Oil.—It seems to be getting quite a common thing to hear of fires caused by the explosion of kerosene lamps owing to low flashing point, and one can hardly take up a paper nowadays without reading of such. Why is it thus? The answer will be found in the columns of the *Liverpool Mercury*, which explains that this country is made a dumping ground for oils which the Americans, who send them to us, would not be permitted to sell at home. The Legislature should intervene to abolish a trade which brings perils to the poor. The inferior oils are cheap, and this is their main recommendation to householders of slender means. A better class of article is everywhere available, but as the price is higher, and the great body of consumers, to whom economy is a consideration, are not aware of the risk they run in burning the inferior stuff, the latter is assured of an extensive market. Parliament will not be able to do anything in the matter until next year, unfortunately; and meanwhile, despite the object lessons cropping up at intervals, the low-priced oils will continue to be bought and consumed.

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Calcium Carbide without a Licence.—Many will be glad to hear that they are now permitted to keep five pounds of calcium carbide without any licence, but only on condition that it be kept in separate substantial hermetically closed metal vessels containing not more than one pound in each. Things are coming round gradually. There has been a lot of nonsense said and written as to "its great dangers." The Insurance Companies, too, now sanction the employment of a small generator and the keeping of four pounds of calcium carbide.

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Royal Photographic Society.—The annual exhibition of the Royal Photographic Society will be opened at 5a, Pall Mall East, with an invitation soiree, on Saturday evening the 25th inst., and will be open to the public from the 27th for six weeks. This will be the forty-second annual exhibition of this society.

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A Dundee Minister and the Magic Lantern.—Preaching in Morison Church a fortnight ago, the Rev. A. J. Forson said there was a tendency at present to introduce the magic lantern into church services. He was not sure that the tendency was a healthy sign of the times, or one likely to develop the latent energies of the Church. He thought it would tend to cripple the Church's influence. The lantern might captivate the people, but it would not make them think. It would create a class of emotional religionists and foster a spirit of piety, but it would not create that type of solid-headed Christians who had been the backbone of the Church all through. When a man found that he had to resort to the lantern to get an audience, it was time he turned to something else than preaching he said.

◆ ◆ ◆

W. R. Hill.—We are pleased to announce that Mr. Hill has now completely recovered from the accident which he had some months ago, and is now once more prepared to execute orders for coloured slides.

Moving Photographs of Miss Helen Terry.—It will interest playgoers to know that Miss Helen Terry, the favourite actress, has permitted Mr. G. A. Smith, of St. Ann's Well, Brighton, to take some "animated photographs" of her at her picturesque home at Winchelsea. Two or three highly successful negatives were secured, giving some interesting glimpses of the actress in her home life.

◆ ◆ ◆

Prizes by the Eastman Companies.—On September 1st, the list of winners of the prizes offered by the Eastman Kodak Company, U.S.A., will be announced. These prizes to the amount of $250 are divided into nine, and are to be awarded to those dealers in the United States sending in photographs of the best displayed windows, all goods being the manufacture of the donors and the property of the exhibitors. The (London) Eastman Photo Materials Company some time ago instituted a kodak competition of pictures under the following classes:—Contact prints, snap shots, ditto time exposures, enlargements, lantern slides, pocket kodak prints and also enlargements. The total amount of the prizes will be £598 15s., and all work sent to the American, German, and French branches will be forwarded to London free of expense. A grand exhibition of the work will be held at the New Gallery, 121a, Regent Street, from October 27th to 16th November. All exhibits are to reach the firm not later than October 9th.

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New Lantern Slides.—Messrs. Newton & Co., of 3, Fleet Street, E.C., we understand propose making special arrangements for the convenience of trade customers. They will in future place their collection of educational and sacred slides at the service of the trade. With this object a special catalogue is being published, bearing only a trade mark on the cover, and without the name or address of the firm, while in future the slides will also be published bearing only the trade mark as in the case of other firms supplying the trade. The new catalogue will shortly be ready, and will be sent to anyone applying who encloses his trade card.

◆ ◆ ◆

The Photographic Salon.—This photographic exhibition will, as usual, be held at Dudley Gallery, Egyptian Hall, Piccadilly, from October 4th to November 7th. The receiving day is 18th inst. All pictures to be forwarded to Messrs. Dicksee & Co.'s warehouse, 7, Ryder Street, St. James's, S.W.

Wrench's Jubilee Cinematograph Slides.—Mr. Wrench writes us to the effect that the engagement by the Alhambra of his special cinematograph pictures of the Jubilee procession, instead of being, as stated in last journal, "for two months," the words "an indefinite period" would have been more correct. Messrs. Wrench can, of course, supply cinematographic pictures of the Jubilee procession, it being only one particular series which is in the meantime reserved.

The Late W. H. Harrison.—It is with great regret that we have to announce the death of Mr. W. H. Harrison, which took place, after a long illness, on the afternoon of the 9th ult. Those who knew him lose a valuable and esteemed friend, who was ever ready to assist them with his vast fund of photographic and lantern knowledge. He was a constant contributor in the early numbers of this journal, as well as to many other scientific papers, and was instrumental in working out the details of bromide emulsion dry plates, and also many scientific inventions and improvements.

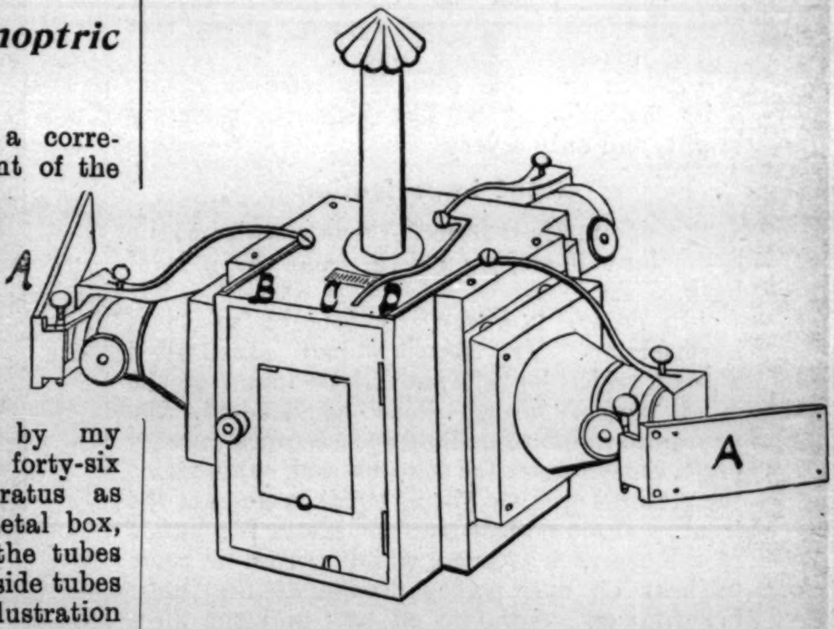
* * *

More about Beechy's Trinoptric Lantern.

I WAS glad to see, writes a correspondent, a short account of the above lantern in the August number of this journal. There are not many people who will remember such an apparatus being in use, and those who do will ere long have passed away. Permit me, therefore, to supply a few further details as colated by my late friend, Mr. Robert Hunt, some forty-six years ago. He described the apparatus as "consisting essentially of a square metal box, into three sides of which are fixed the tubes containing the lenses, and to the two side tubes are affixed mirrors (as shown in the illustration in August number of this journal), thus affording means by which a series of dissolving views may be produced without any of the annoyances which arise from the use of two or more lanterns.

"The imperfection in the trinoptric, as above described, lay in the use of the reflectors, there being considerable loss of light from the side tubes, so that it was advisable to use the lightest pictures for the sides, reserving the darker ones for the front. The double surface of glass mirrors also prevented that sharpness and clearness of detail which it is desirable to preserve. The use of prisms instead of mirrors was suggested, but the narrow limits under which the reflection from prisms is confined rendered it very difficult to get even two perfect discs to be coincident with any high power.

"This will be apparent when the conditions of perfect reflection from prisms is considered. The reflection obtained at the correct angle is the most perfect possible, but it is only when the incident rays is less than 42; at 50 that reflection is perfect; at any greater angle the light passes through. If, therefore, the back of a reflecting prism be inclined at an angle of 45 or 46 degrees, which was necessary in the trinoptric in order to obtain coincidences, it will be evident that part of the disc will be imperfect; and if, in order to remedy this, the back of the prism be inclined much further back, the disc will never agree with that from the front tube, and there is, moreover, the danger of some of the rays of the pencil missing the back altogether, so spoiling the other side of the disc.



"Thus, the limits within such a prism which can be employed are very narrow.

"The front and back of a circular box being firmly fixed to the top and the bottom, but having the sides on which the other tubes are fastened moveable, by a circular tongue and groove in the top and bottom, so that the two side tubes may be inclined to the front tube at an angle from 66 to 100 degrees; between the sides and the front and back there are diaphragms of black leather, bent like the bellows of an accordion to allow of the angular movement, and yet prevent any light from escaping.

"The front sides are put in from above, which is found to be even more convenient than in the former arrangement. The front lever, which opens and closes the shutter, is bent to allow of this, and is moveable about a ring round the chimney, whilst a

semi-circular space

in the top in the centre tube allows of the motion of the cranks of revolving slides.

"Now, the light's being placed in the centre of the box, it is clear that it will, at whatever angle the tubes are inclined, prove true with respect to the light. When the side tubes are placed in such a manner that they form with it an angle of 68 degrees, or even less, this will allow of the back prism being inclined so much less that the angle of incidence shall be sufficiently small, and a perfect disc obtained of 7 feet in diameter at 12 feet distance, with a plain right angle prism; and if a lenticular right angle prism be employed of about 30 inches focal length, the diameter of the disc will be increased to 9 or 10 feet.

"This is sufficient for every purpose, giving a 20 feet disc at 24 feet distance, perfectly bright, and only a very

slight imperfection

at the side furthest from the centre, owing to the lenticular side sloping a little from the axis of light.

"In order, however, to remove this last imperfection, Mr. Beechey had constructed a prism which he believes will be found of the most perfect form. Thus constructed, the prismatic trinoptric lantern becomes a very perfect instrument for lectures and exhibitions, the pictures produced being equal to those of the front. Three perfect lanterns are in the hands of the operator at once, which can all be made to bear on one point, producing the most beautiful and dioramic effects; and the discs by means of the prisms may be united to produce coincidence, and at various distances and with one small lamp of intense brightness, a perfectly defined disc of 20 feet may be obtained from each tube."

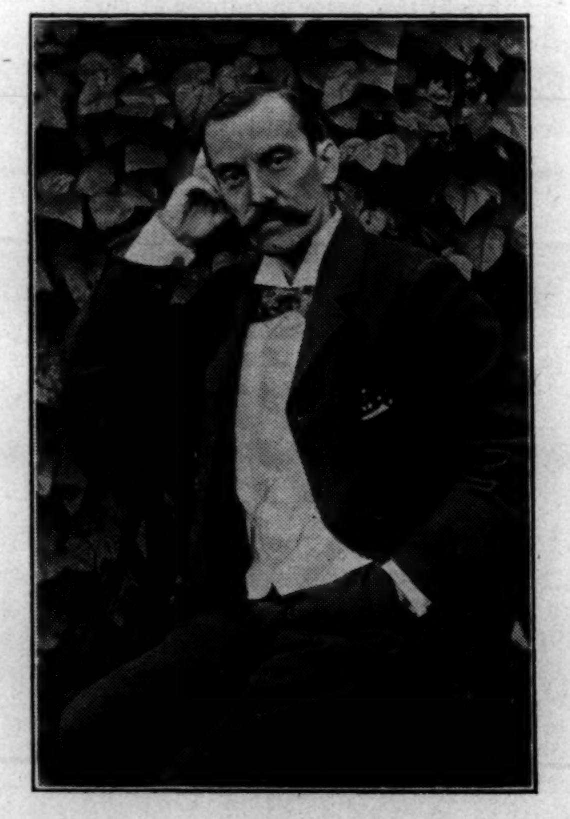
The prisms used were of the angle of 80 degrees.

Prominent Men in the Lantern World.

No. XI.—Mr. EDMUND H. WILKIE.

THE name of Mr. Edmund H. Wilkie, whose portrait we publish this month, will doubtless be familiar to most of our readers as the writer of numerous articles treating on "Optical Science as applied to Projection and Illusions"; but to many he will be best known in connection with the late Royal Polytechnic Institution, in the large theatre of which he delivered some hundreds of lectures.

As will be gathered from our photo (which, by the way, was taken in August of the present year), he is not yet in the "sere and yellow leaf," being still in the early forties; but his lengthy experience is accounted for by the fact that his career as a public lecturer commenced at the early age of seventeen.



1897.

He tells us that his first lantern, which he possessed at the tender age of six years, was composed of bright tin, the condenser and object lens being identically the same both in point of size and curvature. The illuminating agent was an oil lamp, but the great drawback to a successful exhibition was, that shortly after lighting up, the reflector always melted off its stem, and after ticking like a clock for some few minutes, the whole fabric one day fell apart.

Later, a relative made him a present of a mysterious instrument known as "Kuss's Wonder Camera." This hailed from Germany, and was in form not unlike our aphengescopes for showing opaque objects.

This would undoubtedly have been a great success, but Master Wilkie and his relative rehearsed so frequently that when the audience arrived during the Christmas holidays the supply of oxygen was found to be exhausted.

Like most successful lanternists, the subject of our essay is a man of many sides, and an artist of more than average merit. He has produced in turn pictures in oil and water colours, besides painting church windows, stage scenery, and panoramas; and has for some years received valuable hints and instructions from Mr. W. R. Hill, the well-known artist on glass, and he has produced good hand-paintings for the lantern. He has, besides, considerable knowledge of tools, working well in wood and metals, a fact which has proved of considerable value to him in carrying out his experiments.

In his earlier stages Mr. Wilkie's apparatus and views gradually improved in quality and numbers, until at seventeen years of age he made his *début* as a public lecturer, and meeting with considerable success was soon attached to the staff of lecturers of the Polytechnic. Applications were frequently made to that institution for the loan of first-class lectures and lecturers; and to meet this demand the travelling branch was instituted, the dioramic department being filled by Mr. B. J. Malden and Mr. E. H. Wilkie. Other lecturers on the list also used dissolving views, but did not make them a speciality. Mr. Wilkie received a number of engagements through this medium right up to the close of the institution in 1881.

The Alexandra Palace was the scene of many successful lectures, but in this case owing to the extreme size of the theatre, which was said to hold 4,000 persons, and to the imperfect arrangements for excluding the light, Mr. Wilkie was obliged to construct special apparatus with jets of extraordinary power to conquer these obstacles. The Egyptian Hall was also the scene of operations, his lecture on the "Anglo-Egyptian War" filling the programme every evening for four weeks.

As may naturally be concluded, Mr. Wilkie has in the course of his experience introduced many little novelties in mechanical movements as applied to slides and lanterns, amongst which may be mentioned a special registering slide runner, masks for registering, which having a circular motion could be registered independently of the lantern, two special forms of limelight jets of great power, a mechanical arrangement for sinking ships on the screen, a new movement for bombardment effects, an appliance for working auroras without the usual flickering with the fingers, a panoramic ship and wave movement of simple construction, which latter movement has been adopted by a wholesale firm of slide producers, and will be shortly on the market.

Amongst his more recent inventions we may mention a mechanical slide to illustrate certain astronomical phenomena designed for Mr. G. Albert Smith, fellow of the Royal Astronomical Society, and Mr. Wilkie informs us that the designing alone occupied him the best part of a week. We have inspected this special slide, and although it is most complicated, it works excellently. Mr. Wilkie possesses an extensive knowledge of lantern effects, and some of his lectures contain remarkable movements which could not be obtained in the way of trade, such as the Mouse Tower on the Rhine, during the exhibition of which swarms of mice are seen swimming across the river, and on arriving at the tower, scale the walls and climb over the battlements; and numbers of others of a like character. Of his collection of beautiful hand-paintings formerly shown at the late Polytechnic Institution we need not speak, they having been previously described in these pages.

As to his powers as a lecturer, we need not say much, the majority of lanternists being acquainted with his particular style; but our remarks upon this portion of our subject may well be summed up in the criticism passed by *The Times* newspaper, which says: "Mr. Wilkie's lectures are chatty and agreeable"; and we may also add that he has studied elocution to good effect, as we find when the work before him presents features requiring an impressive delivery.

Mr. Wilkie has been confined for the most part to his residence for the past few years, owing to delicate health, and had got quite thin, but when visiting him a few days ago, after the lapse of several months, we had good reason to congratulate him on his recovery and increased stoutness. We hope soon to hear of his taking a more active place again in the world of lanterndom.

Off Duty.

By FRED J. SCRIMGEOUR.

THREE months ago we lanternists, with one mind, packed our chests, roped our boxes and consigned our apparatus generally to its paradoxical hibernation. Whether we packed things properly or simply chucked them in, October will show. Meanwhile we are off duty, with the enthusiasm and energy which we found such a useful outlet in the winter now free and disengaged. Some of us (I might almost say the majority) combine a sense of duty with our pleasure, and find in photography the needed relaxation for the summer season. And truly from no other hobby could we derive so much future benefit. I do not require, in such an up-to-date journal as this, to enlarge upon the ease, the variety, and the cheapness of the numerous methods we have at hand with which we may produce lantern positives from photographic negatives. But I would like to emphasise the few difficulties—or perhaps they only deserve the title "Peculiarities"—which attend the selection and impression of a picture when a lantern slide is the end in view. Let me first of all take for granted that the **majority of lanternists** have an eye for the artistic, and that their intuition enables them to make every plate into a real picture. You may question this axiom; well then, let it be a supposition—"Art: what it is," permit me to shun in this weather. A pictorial description of Greenland, introducing bergs and icefloes without end, I could write just now with true feeling! In the first place absolute and complete definition we must have; and also crispness in detail up to the very edges of the plate. There may be effects, I admit, where perfect sharpness deducts from, rather than adds to, the artistic value; but in these few cases half a turn of the lantern focusing screw will achieve the same end.

In the second place there crops up the great question of distance. Perhaps, if I here give a little personal experience, the purpose will be answered well. The optical lantern lends itself in a wonderful degree to the faithful representation of distance. This is, of course, on account of the great extent in which the view is magnified before it falls upon the linen screen, and the respectable distance at which the audience is, or ought to be, seated. If, however, you are intending a "distance" view let it be so exclusively, or the effect desired will most likely be lost. One view I have will be a good example. It is a sea view; distant horizon clouds were or should have been the chief attraction; a little boy—quite an insignificant little chap—is building what his vivid imagination leads him to call a castle. I was so intent upon exposing at the proper moment that I quite overlooked my young friend in the foreground. The result as it is on the screen at once centres the attention of the audience on the figure, and the marvellous cloud effect, which inspired the view, gets but scant notice as a background. Then, again, very great care must be taken to have all vertical lines parallel to each other. In ordinary work where contact paper prints only are in the photographer's mind, it is customary to somewhat neglect the swing back unless the buildings form the chief object of the view, or are within a moderate distance of the lens. Now, this care, in our case, must be much extended; even the most distant cottage must not be neglected because of the great enlargement which our view must undergo.

Excessive contrast has also spoiled many an otherwise perfect slide, and in all views for the lantern the importance of gradation should be kept in mind, and no care spared to add this quality to others we may already have.

The Electric Light in the Optical Lantern.—No. VII.

By CECIL M. HEPWORTH.

(*Continued from page* 114.)

THE most convenient form of artificial resistance is that afforded by coils of metal wire. Metals vary considerably in their intrinsic resistivity, and in many cases that quality alters in any one metal with variations of temperature. As the electrical energy which is absorbed by the resistance is converted by it into heat, it follows that a metal should be chosen that does not alter its conductivity with alterations in temperature, for the wire of which a resistance coil is made is bound to get very hot indeed. Iron wire is the cheapest material of which to make a resistance coil, but that does not fulfil the above condition very well. However, arc light work is a very different thing from standardising instruments, and these slight variations in resistance are of very little consequence. German silver is a much worse conductor of electricity than iron, and, therefore, the same electrical resistance can be made up of a much smaller quantity of wire of this alloy. It also has the advantage of keeping moderately constant resistance through very wide variations in temperature. Better still, in both these respects, is the alloy known as "Platinoid," which can be procured in the form of wire of various sizes from the London Electric Wire Company, of Golden Lane, Shoreditch. This is the material that I have lately used exclusively in the construction of resistances.

In making a resistance coil there are two chief things to be considered. Firstly, the wire must be of a sufficient length to afford the required resistance, and secondly, it must be thick enough to carry the current required without getting dangerously hot. The thicker the wire, of course, the less resistance it offers to the passage of the current; the cooler it will, therefore, keep under a certain strain, and the greater will be the length required to give a certain number of ohms. The

happy medium

or compromise between length and thickness is the thing to be aimed at. I have found that No. 14 S.W.G. platinoid wire, if properly wound with plenty of room for cooling currents of air to pass between the coils, is quite large enough to carry 15 ampères for any length of time without undue heating. Four pounds of this will give a resistance of over 7 ohms, which is a great deal more than is required for a 15 ampère arc on a 100 volt circuit. But it is a great advantage to have a resistance sufficiently large to be useful on a circuit of higher voltage, which is occasionally to be met with, or to be able to turn down the light to about half the power for use in smaller halls. It is not a difficult thing to construct a variable resistance that by means of a sliding conductor and several contact points is easily controllable to any desired extent, and the operator will find that such an instrument is an inestimable boon. A coil of definite resistance is, naturally, still simpler to construct, and where a constant amount of current is always required on one circuit of constant voltage, is probably all that is requisite. The quantity of wire for this is easily calculated from the above data.

It has been said that when an electric current is made to traverse a wire which offers any considerable resistance to its passage, part of the electrical energy will be converted into heat. In the previous case his consummation was purposely brought about in an artificial resistance, or rheostat, in order that the surplus pressure of the electricity might be frittered away, and the voltage reduced to that required to operate the arc lamp. But as may be supposed, the same thing will occur in the wires which convey the current to the lanternist's table and from one point to another, if those wires offer resistance to its passage. Wires of infinite conductivity—that is to say, of no resistance—are not to be had at any price, for there is no such thing as a perfect conductor. Hence it follows that care must be observed that all wires employed are sufficiently large to carry the amount of current they are destined to convey, without offering sufficient resistance to its flow to cause them to become perceptibly heated.

Tables showing the conducting power of wires of different sizes, and the amount of loss through resistance in each when certain strengths of current are passing, are to be had from various sources. Most of these are calculated on the assumption that a current of 1,000 ampères requires a conductor of approximately pure copper, having a sectional area of one square inch. This is the basis on which the wiring of installations is usually carried out, and from the point of view of all-round economy, it is a very fair one. But it is not the lanternist's desire to convey the electric current from the point at which it is available on the mains to his table with as little drop in voltage as possible. Indeed, a loss in this respect is rather an advantage than otherwise, for it will reduce the necessary amount of his

artificial resistance.

What he has to bear in mind is that his wires do not offer sufficient resistance to the passage of the current to raise their temperature to any noticeable extent, so that they thereby become a source of danger. No. 13 B.W.G. copper wire, on the above-mentioned basis of calculation, is capable of carrying a current of 6.6 ampères, but for the purposes of the lanternist, where economy in voltage is not a matter of consideration, such a wire may be taken as all sufficient to carry his current of 15 ampères. He will do well to make it a rule never to use a smaller wire than this, or a compound or flexible wire that does not contain the equivalent in each strand—if a double conductor—of a No. 13 wire.

(*To be continued.*)

Startling Secrets of a Studio.

PORTRAITS WITH A PURPOSE.

SOME strange characters visit the photographer's studio, and uncommon reasons are frequently offered for submitting to "sit." An elderly gentleman, says *Pearson's Weekly*, recently surprised an artist by taking out his teeth and discarding his wig, after being placed in a favourable position. In reply to the photographer's look of surprise, the "subject" mumbled an explanation. He had some relatives across the sea who were waiting somewhat impatiently for his demise, his wealth falling to them according to the conditions of a will which he deplored he was powerless to alter. They would be gratified to see how old and feeble he was appearing, and just when they were congratulating themselves on a speedy riddance, he would post them photographs in which, with teeth and hair, he was looking robust and happy.

The photographer was asked to do his best with the happy picture, and the difference between the two was miraculous. Under the one depicting crabbed age the witty rogue wrote, "Before Faking," while the companion bore the agreeable title "After." For his artistic productions the artist was given an extra fee.

A young girl painted wrinkles on her face, and dressed her hair in an unbecoming manner, astonishing the photographer when she insisted on being "taken" in such a state. Observing that the professional seemed disinclined to set to work, she informed him that the picture was going to a relation whom she had never seen, but who wished to adopt her. As she had no desire to leave her parents—who were anxious to comply with the aunt's request, the latter being rich and influential—she considered that an ugly photograph would put an end to the business at once.

Photographs tend to deceive many unsuspecting friends and relatives residing abroad. A plain young woman entered a West-end studio and asked to be photographed with a handsome gentleman, the latter commodity to be provided by the artist. Believing the girl to be wandering, the man of plates plied her with questions, and received the startling information that she wished to make her folks in Scotland believe she was engaged. As she was willing to pay for high-class work, and to remunerate the *fiancé* model, one of the assistants—whose good looks pleased the peculiar patron—proffered to pose, and the twain struck an endearing attitude. The girl ordered three dozen large cabinets, and went away happy.

It is declared that good-looking men quite frequently submit themselves as "lovers" for photographic work. A "coster" who boasts a handsome face and commanding figure lets himself out for this purpose every Bank holiday, loverless girls being only too pleased to see him share their picture, while many a shilling crosses his palm as the result of this—to him—pleasant task. A new opening for handsome and unemployed men; work, too, that calls for nothing more arduous than "looking pleasant."

Accompanied by a meek little husband, an Amazonian woman interviewed a photographer, requesting a picture that would seemingly **reduce her size** and render the partner of her woes more manly. The outcome of this was that she was seated at a table which somewhat concealed her, while her miniature spouse stood on a raised platform behind her.

Men who grieve at their short stature frequently insist on standing on some slight elevation, especially if in a group with tall ladies. Girls who aspire to be daughters of the gods stand on footstools, with a lengthy skirt falling to the ground. A photographer who has made a study of these weaknesses, provides specially-constructed footstools for ladies who are dissatisfied with their inches.

There are more deceptive photographs going the rounds of the matrimonial agencies than anywhere else beside. Ladies and gentlemen who woo by letter, photograph inclosed, adopt all manner of devices to appear attractive in the picture, thereby to entrance the opposite sex. It is rumoured that there are studios which give especial notice to this sort of work, and pay peculiar attention to matrimonially inclined customers. One gentleman, well-known for his heiress hunting propensities, spends quite a fortune in photographs, and makes up elaborately, wearing false curls and dyed moustache, and taking care to show a fine-shaped nose in profile at each operation. His pictures are scattered widely, and are no doubt highly treasured by fellow advertisers of the persuasive sex.

The Intensification of Lantern Slides.

By EDMUND A. ROBINS.

It often happens that when a lantern slide has been made and finished off it is found that the density is not such as will give the best and most pleasing result obtainable from the negative, and in order to save the slide, recourse has to be made to intensification; and it is my object in this article to give a few details of the principal processes whereby this can be done, and at the same time giving approximately the colour of the resulting deposit, which can often be chosen to suit the subject rendered in the slide. The most important point in slide making to which most lanternists aim is to have perfectly clear high lights; so clear, in fact, that when the slide is laid film downwards on white paper no trace of deposit or stain can be seen. This, of course, requires a perfect negative if it is to be obtained by development; and as perfect negatives are not so very plentiful, the development of the slide is not generally pushed as far as it should be for fear of fog and stain, and then intensification comes in. But in this the greatest care must be exercised, as in many of the intensifiers of the present day careless usage invariably results in some staining, however slight, and then, of course, permanency largely depends upon care in the manipulations.

The intensifier

which first comes to mind is our old and much-abused friend, mercuric chloride; this is a very powerful intensifier, and when properly used is permanent. The formula I can recommend as being a very good one, is as follows:—

Mercuric chloride	½ ounce.
Ammonium chloride	½ ,,
Water distilled	15 ounces.

The ammonium chloride can be replaced by about 40 mins. of hydrochloric acid, either of which, besides making the mercuric chloride dissolve easier, also minimises the possibility of staining. The plate is soaked in the above solution until the whiteness extends right through the film, and I cannot impress too forcibly the extreme importance of eliminating by thorough washing all hypo from the film before intensifying, otherwise stains can be certainly expected.

When perfectly whitened, the plate is well washed in running water for some time; the mercuric chloride solution can be used again and again until exhausted. The plate is blackened in one of the following solutions:—A 4 per cent. solution of ammonia, this gives a very black deposit, but is rather liable to show pinholes in the shadows and also stains easily if the plate is not properly washed between the mercury and ammonia. A solution of sodium sulphite, 1 ounce to the pint (20 ounces) and acidified with citric acid gives a very blue-black deposit and slightly increases the brilliancy, the density in either of these cases can be reduced by placing in a clean hypo bath and well washing. An alkaline developer such as hydrokinone may be used, and works slowly, but gives a very nice clean deposit of a warm black colour and is not so energetic as ammonia.

Mr. Chapman Jones strongly recommends the ordinary ferrous oxalate developer acidified with oxalic acid. In any of the above, the plate is left in the bath until all whiteness has disappeared from the back, it is then washed and allowed to dry, the density increasing slightly. Another method of increasing the density of the deposit is by means of uranium ferricyanide, and the following formula can be recommended:—

Uranium nitrate	100 grains.
Potassium ferricyanide ..	100 ,,
Acetic acid	½ ounce.
Water distilled	10 ,,

The negative after being well washed is immersed in the above and allowed to remain therein until the required density is reached; the colour of the image changes to a brownish red, this can be made red by adding a small quantity of citric acid. The plate is afterwards moderately washed, prolonged washing reducing the density, a weak solution of ammonia will also do this, but more rapidly; Schlippe's salt can also be used in the proportion of 100 grains in 10 ounces of water, this increases the density slightly and turns the image brick-red in colour.

All the above intensifiers will do for ordinary negative work, and of course in that case the non-actinic colour of some must be taken into account. I hope this article will induce those lanternists who have formerly discarded their weak slides to try some of the above methods.

*Dissolving Views.**

By M.D.

AS a preface to this short communication, the writer wishes to state that as he is neither a professional lanternist nor in any way connected with the trade, the following remarks may therefore be accepted without prejudice from an impartial and practical point of view.

The question "Is the lantern played out?" has been so frequently discussed that there is no need for us to go over old ground again.

No one will dispute that for either scientific or educational purposes a single optical lantern will generally if not always supply every need of the lecturer, namely, the projection of slides—chiefly diagrammatic—on the screen to illustrate the most important points in his discourse; but for a popular entertainment something more than pushing a monotonous succession of photographic slides—usually uncoloured—through the lantern across the screen is necessary to secure the attention and gain the confidence and approval of the average audience; a fact which all intelligent persons who have any experience of lantern exhibitions will readily confirm. The majority of those who patronise lantern entertainments appreciate and applaud really high-class **coloured slides and effects**; for, provided they are judiciously introduced and accurately projected, they tend to raise the standard of such exhibitions, and are capable of changing what might otherwise be a dreary and soporific description of the pictures displayed on the screen into a pleasant and interesting entertainment. It appears to be the fashion in the present day to disparage the use of two or more lanterns to illustrate a lecture, but if dissolving views have fallen into disrepute, the cause is sufficiently obvious. It is within the knowledge of the writer that on several occasions members of the (now too numerous to mention) photographic societies expressed the opinion that photographic lantern transparencies are ruined by being tinted or coloured; and that to dissolve one picture into another is a procedure which—if not absolutely wicked—is certainly to be severely deprecated. Why, then, it may be reasonably asked are photographers so extremely anxious to find out a process whereby photographs can be produced in their natural colours?

Again the question of dissolving with a single lantern, to quote from the OPTICAL MAGIC LANTERN JOURNAL (Vol. VII., No. 91, page 205) "is a very interesting subject, and to lanternists a very important one . . . . almost every device which the ingenuity of man can conceive has been tried . . . . in order to produce a dissolving effect." If therefore the system of dissolving has really gone out of date, it is, to say the least, curious why so much trouble should be taken, and so much energy wasted, in trying to perfect an apparatus by which this effect can be produced by means of a single lantern. The fact is, that really first class exhibitions (few though they be at the present time) of dissolving views have lost little, if any, of their fascinations to the community at large. The writer has good reason for making this statement, for he had the good fortune to be present when Mr. J. Hay Taylor exhibited a selection of those beautiful slides and effects which years ago delighted **thousands of people** at the late Royal Polytechnic. On this occasion, which was a meeting of the now defunct Lantern Society in Hanover Square, a number of people were unable to obtain even standing room, and the report in the OPTICAL MAGIC LANTERN JOURNAL (Vol. V., No. 67, page 203) says, it was "the most popular exhibition yet given in connection with the Lantern Society." Again, anyone who has attended one of my friend B. J. Malden's lectures, so excellently delivered and so perfectly illustrated by his splendid triple apparatus, will bear witness that in competent hands dissolving view entertainments have lost none of their former attraction.

Many reasons could be advanced to explain why such exhibitions are not so popular now as they were a few years ago, but it is only necessary to mention a few. First in importance is the introduction of cheap and inferior photographic slides, which cannot compare with those produced by hand in brightness or clearness. Secondly, the hire system; for in many cases the slides required to illustrate a lecture are only received shortly before the time advertised for its commencement. The lanternist has, therefore, no opportunity to detect any of the imperfections which are so frequently found in many of them when projected on the screen; and the lecturer remains in a blissful state of ignorance as to whether he can safely rely on any picture shown on the screen to fit in with his own description—to say nothing of such trivial details as to the difficulties and embarrassment produced by difference in the size and shape of the slides. But, in spite of every precaution, a careless and incompetent operator has frequently been responsible for the complete failure of the entertainment.

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* Received too late for insertion in ANNUAL.

To obtain the best results in dissolving, it is absolutely necessary that some system of exact registration of the slides be employed, therefore the lanternist should have one of the many varieties of adjustable runners fitted in his lanterns. Most of these, however, are unnecessarily elaborate, too complicated, and proportionately heavy and expensive. Mr. Goodwin Norton has a runner which seems to meet every requisite; it is easy to adjust, and being made of aluminium is very light in weight. Moreover, it has the extra merit of being very moderate in price. With this apparatus a panorama slide can be equally well registered as one of the ordinary size.

An excellent proof of the value of these runners occurred to the writer of this article last Christmas, when he had occasion to show a series of forty-six effect slides with his bi-unial. These slides had been registered by the owner, but the writer had no opportunity to try them before the exhibition. Nevertheless, forty-four out of a total number of forty-six were found to register with almost

mathematical accuracy,

a fairly conclusive testimony that slides once registered in a lantern, optically true, will also register perfectly in another equally well corrected.

The advantages of dissolving views and the employment of more than one lantern are sufficiently obvious to everyone who has any experience in lantern work, the relief to the eyes of the spectator not being the least.

Again, if an accident should occur—and these are by no means unfrequent when the same lantern is used continuously during the exhibition—a second one being available, the lecture can be continued without interruption, and the lecturer is spared the unpleasant ordeal of an apology to his audience. Another advantage is that with a bi-unial a curtain slide can be used to commence and end the entertainment—a proceeding which is always appreciated by a popular audience. In conclusion, a word or two about dissolvers may not be out of place.

It is quite unnecessary here to describe the many forms which are on the market, but the writer would draw attention to one, first made at his suggestion by Goodwin Norton.

It provides a means—hitherto impossible with the ordinary six-way dissolvers—of cutting off the light in both lanterns, but still leaving the by-passes on in each instrument of the bi-unial apparatus. The convenience of this arrangement can only be adequately appreciated by those who have tried it. The same result may be obtained to a less degree of perfection by having cut-off taps on the supply pipes, but this only introduces another element of complication in working the lanterns.

*The Lanternist's Practical Cyclopædia.**—No. XI.

By CHARLES E. RENDLE.

Fantoccini Slides.—A marionette show is essentially a show of moving puppets, or images, or dolls, whose movements are worked by wires by the puppet player, who is one under whose control the movements of the puppets are. A puppet show is a mock drama by puppets, such as Punch and Judy, etc. The above comes under the heading, Fantoccini, inferring that puppets take the place of performers in dramatic representation. Lantern slides of the Fantoccini type are most delicate in construction. An example may be taken in the scene of a blacksmith's shop, in which the figures are each and all actively at work. These figures in their many parts are cut from mica, and covered with transparent colour, imitating Nature as closely as possible. The mechanical contrivances are wires, cams, springs, etc., which necessarily have to be accurately and delicately fitted.

Ferrotype.—The salts of iron process in photography on japanned plates.

Film.—In photography, the thin skin formed on the plate by the emulsion, and which after exposure to light carries the photographic image. Very thin sheets of transparent celluloid are also coated with the sensitised emulsion, and termed films, and may be procured commercially either in flat sheets in the various plate sizes, or in rolls.

Finding Candle-power.—*See* Candle-power.

Flash Lamp.—A spirit lamp so constructed that a blast of magnesium powder can be forced through the flame at will, causing a brilliant flash of light of sufficient actinic intensity for photographic purposes. The Keys' lamp of this type is specially efficient, for with this the flash can be made continuous, and thus accommodated to a timed exposure. Flash lamps are principally used in darkened chambers, and for photographing interiors of tunnels, etc.

Flatness of Field.—The term, in brief, means a picture that is in perfect sharpness in all parts of the screen, but as this is not always the case, it behoves us to ascertain the why and wherefore. Roundness of field is shown when a picture is sharp at its centre and blurred at the margins, or *vice versa*. The fault is pretty general when single lenses are used, in consequence of the rays of light which enter at the margins coming to a focus closer to the field of surface, than does the rays that penetrate the lens at its centre. The Petzval portrait lens is largely used in lantern work, and if the field shows a roundness, this can sometimes be removed by manœuvring the back combination in bringing the lenses which form the combination into closer contact. This is best done by reducing in thickness the separating metal ring between them until the desired improvement is achieved.

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*All rights reserved.

FOCUS.—That point at which a number of rays of light meet, after reflection or refraction. A central point of convergence. All lenses, whether objectives, condensers, or otherwise, have their focalising powers, and lanternists are advised to make themselves acquainted with the particulars of all such lenses belonging to their apparatus. It is useful specially for calculation in fixing upon a diameter or disc. A ready reference table, which is valuable to all, was prepared some time back by Mr. J. Hay Taylor, editor of the OPTICAL MAGIC LANTERN JOURNAL, and which is obtainable at the office. By means of this, one can tell at a glance the size of circle he can get at any given distance from the screen with any focus of lens.

FOG.—Photographic aspirants are fully conscious of the definition of fog, as applied to photo-science, but should there be one who has not experienced the study of the fault, he or she has the writer's sympathy in their ignorance. A fogged picture is one whose distinction is partly or wholly marred by the presence of a haze over its surface, and caused by rays of actinic light striking the sensitised plate before development has been completed. The causes are many; light may enter the dark room, camera, or the dark slide. Imperfect diaphragms will sometimes cause fog, or the ignition of a match in the dark room, but from whatever cause the fault can in most cases be accounted for, and remedied.

FORMULA OR FORMULÆ.—In chemistry, a set of signs or symbols representing the constituents of a compound body.

FRONTS OF LANTERNS.—*See* Lantern Fronts.

F. R. P. S.—Fellow Royal Photographic Society. This society received its Royal Charter by Her Majesty's Command in 1894.

GALVANISM.—That section of electrical science which treats of the currents being due to chemical action, particularly of acids on metals.

GALVANOMETER.—An instrument for determining and gauging an electric current, its forces, etc. It consists of a compass needle which is surrounded by insulated copper wire. Copper is here named because it is most used in electrical work, its advantages being (A), a good conductor; (B), it is very pliable, and may be bent about with comparative safety, and (C) it is less costly than most other substances that are sometimes used as conductors. The copper wire, therefore, for this purpose is insulated by a coating of paraffin wax, shellac, cotton soaked in oil, india-rubber, or most any substance that is a non-conductor. If the electric current is flowing from S. to N., the north pole of the galvanometer needle inclines round to the west, and if, on the other hand, the current is flowing in the opposite direction, the north pole of the needle deflects to the east. By bringing the north pole of a bar magnet in contact with one end of the copper wire, the needle oscillates violently, but if the magnet be held quite still, the needle soon comes to rest, and by removing the magnet from end of wire the needle again sets off in the opposite direction, showing a current is flowing in a contrary way to the first mentioned; and if the magnet is kept steady, the needle again comes to rest as the current dies away. This inertia is detected in each of the above cases by the galvanometer.

GASES.—Elastic fluids, and similar in form to air. That kind of matter in which there is no cohesion between the different particles, when at common temperatures, but positive repulsion. All gases exert force on the sides of cylinders or other vessels containing them, and the amount of pressure is proportional to the quantity of gas the vessel contains.—*See* also Diffusion of Gases.

GAS-BAGS.—An impermeable bag made of india-rubber for the conveyance of gases. For lantern purposes they are almost a thing of the past, having been superseded by the much-to-be-preferred steel cylinders, or gas bottles as by some they are called.

(*To be continued.*)

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The Invention and Development of the Optical Lantern.

By **EDWARD DUNMORE.**

CHAPTER XVI.

PINHOLE photography was at one time very popular, and some really artistic work was done. It points out a method of getting a photograph when no lens is available, but for real earnest work is out of the question; the small amount of light falling on the plate enormously prolongs the time of exposure, and focusing, or rather the composition of the subject, is reduced to a matter of guesswork. Any one wishing to try it can easily do so.

The whole apparatus consists of a box which can be made perfectly light-tight, and sufficiently large to contain a sensitive plate at one end, and at the other a small aperture covered with a piece of very thin metal, through which a small hole is made with perfectly smooth edges. The size of the hole is regulated by the size of the plate to be used. For a half-plate about a fortieth of an inch is about right, which is slightly increased with the size of the plate. There is insufficient light for focusing, but this is of no moment, as the image has always one focus. The proximity or distance of the plate from the aperture alters the size, but not the definition, which remains constant. The exposure in a good light may vary from five minutes to any time, according to the size of the picture, but is controlled by the rapidity of the plate and kind of developer, as in other methods of photography; the same laws must also be observed as to the camera being properly level and the plate vertical. A metal plate with a series of holes is procurable at the dealers; which can be attached to the camera in place of the lens, marked with the size of plate each aperture is supposed to be suitable for. This, of course, is the most easy method, as no deviation from the usual working is necessary, and the whole attention can be given to the time of exposure.

CHAPTER XVII.

ALTHOUGH it may be seldom necessary for the unprofessional to collect and reduce his residues on account of their presumably small quantity, yet the knowledge of how to do it efficiently may be useful, especially if wet collodion work is practised, emulsion made, or paper prepared. There are several kinds of residues that require separate collections and treatments. There is silver nitrate from all sources, silver from the wet plate developers, intensifying solutions from the fixing solutions, waste plates, spoilt films, and emulsions and gold from spent toning baths.

The most important

of this salvage is the hyposulphite of soda fixing solution. Procure a large earthenware or glass pan, rather tall for its width, with a tap about half-way up the side.

Into this put all the used and waste fixing baths, washings out of bottles that have contained silver, and when nearly full dissolve a little liver of sulphur or sulphuret of potassium in hot water, which will make a deep, yellow-brown, foul-smelling solution; add some of this little by little, well stirring after each addition, until there is no further brown cloudiness produced, and the hypo waste slightly smells of the sulphuret. As long as there is any metal to be precipitated there will be no odour, but after all has combined with the sulphur, any further addition is easily recognisable by the smell. Give it a good stir and let it stand to subside, when the supernatant fluid, which should be nearly colourless, may be drawn off. This process can be repeated as often as the vessel gets filled. To collect, filter this mud through two thicknesses of house-flannel, let it drain, and then dry in an earthenware pan over the fire.

The water from washing prints or any solution containing silver nitrate is allowed to collect in deep pans, and is then precipitated by adding a little hydrochloric acid; some prefer salt, but as excess of salt re-dissolves the chloride, and as hydrochloric acid does not, in a dilute solution, the acid is the more economical addition. The chloride of silver will settle to the bottom, when the upper layer of fluid can be drawn off and the process repeated until there is sufficient residue to dry. As with the hypo waste, it is filtered through two thicknesses of flannel, drained and dried in readiness for reduction; or if a quantity of scrap zinc be put into the moist chloride and left a few days, the silver chloride will be reduced to a metallic state, which will be known by the chloride, originally a pure white, changing to a grey throughout the mass. The zinc can now be separated from it, and the silver washed and dried ready for further treatment.

Waste gold solutions, old toning baths, and any solutions containing gold are precipitated with a solution of protosulphate of iron, the solutions being made slightly acid with sulphuric acid in order to neutralise any alkali that may have been introduced into the gold, which would, in a measure, retard the precipitation. In this case the precipitate will consist of metallic gold which must be collected and washed on a paper filter, and dried previous to making it into chloride, which is, perhaps, the best way of utilising it.

The films of wasted or spoilt plates are scraped together and heated with a little hydrochloric acid and water. Spoiled emulsions may be treated in the same manner. Maceration and heating with acid

decomposes the gelatine;

the bromide of silver being precipitated, when it can be washed, dried and mixed with the chloride for reduction.

Scraps, cuttings, and spoilt paper can be burnt in an old iron saucepan, adding the paper by handfuls so that it all gets burnt, and left to smoulder until it is entirely reduced to a grey ash. A little powdered nitre sprinkled on it from time to time will expedite matters. The ash is not very rich in silver, but consists chiefly of the loading and enamel of the paper, about an ounce of silver to a hundredweight of cuttings; so, unless there is much of them, it is scarcely worth the trouble of collection. The residue from various sources can be reduced to the metallic state by fusion with suitable fluxes in a fierce fire; providing there is a stove with a good draught, small quantities may be reduced, but, first of all, the dried residue must be crushed fine, mixed with from one to two parts of flux, and passed through a sieve.

The chloride of silver is mixed with bicarbonate of soda and a little borax, and the sulphide of silver with nitrate of potash for reduction separately; the ash residue may be mixed with the sulphides and reduced together. A small fire is carefully laid, a clay crucible in a saucer placed on it nearly at the bottom of the grate, coke is lightly packed round and left to burn gently. When it becomes incandescent throughout, the mixture of residue and flux is introduced into the crucible a little at a time to keep it from boiling over. When the pot is nearly full the lid is adjusted, the coke piled on, and the draught increased until the surface of the melted flux in the crucible looks quiet, and shows no signs of ebullition (from time to time an iron stirrer is used to expedite the separation of the reduced metal). The coke is now packed all over the crucible and cover, and the draught kept up, adding coke occasionally for an hour or so. It is then tested by dipping an iron rod—the stirrer will do—into it, and examining the adhering mass. If the process is completed, there will be no globules of silver in it; but if not, it will be seen spangled throughout with globules of the metal, indicating that more heat must be applied, or a longer time given in the fire. When the silver has all gone down the fire is allowed to die, and the crucible cooled and broken with a hammer. The silver should now be seen as a bright button at the bottom, any flux adhering can be dissolved off with hot water.

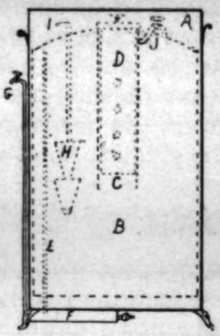
The sulphide residue is treated precisely similar in either case. If the metal seems too difficult to separate, a little more borax added during the melting will expedite matters. These buttons of silver require refining. To do this the metal is put into a plumbago crucible and melted, and this requires more heat than in the first case. When fluid, the crucible is lifted out of the fire with the tongs, and poured from a height of four or five feet into a deep pan of clean cold water, from which it is removed in a granulated state, and dried.

The principal difficulty with amateurs is getting a fire with sufficient heat, and it is a hopeless task without. Some close kitchen ranges I have seen could be made to give plenty of heat; an open fire will rarely do so.

NEW APPARATUS.

NEW "INCANTO" ACETYLENE GAS GENERATOR.

Improvements have been added to the "Incanto generator," by Messrs. Thorn & Hoddle, inasmuch as it is possible now with this apparatus to get perfect light at once without the necessity of waiting until a certain quantity of diluted gas had been consumed or allowed to escape. There has also been added a simple and automatic device where any extra gas may be allowed to escape after the holder is full. We have prepared a sectional sketch the better to explain the means by which this is achieved. The tank into which the water is placed is represented as A; B being the gas holder. To the upper part of B, and connected with the opening on top is a large tube or division C, and it is into this that the carbide holder D is placed. The connections between D, where the gas is generated, and B, where it is stored, are at the lower end of C, which is open, and also at the small connecting tube J, which is fitted with a tap. If D be charged and the tap J closed and G opened, it follows that no water can reach D when the holder is placed in the water, until J be opened, when immediately gas is generated and the holder rises from the water which previously filled it. Should the apparatus stand in disuse and more gas be evolved than it will contain, an outlet is formed at H as soon as the end of the cone rises from the water. The reason for cone-shaped outlet is to keep a free passage in the pipe. Rubber tubing is attached at I and conducted outside. The stand pipe is shown at E which communicates with the condenser F, which in turn is connected with the service pipe G.



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Editorial Table.

"SHAKESPEAREAN GUIDE TO STRATFORD-ON-AVON." London: Dawbarn and Ward, Ltd., 1s. net (cloth bound). This guide, which has been written by the joint editors of the *Photogram*, viz., H. Snowden Ward and Catherine Weed Ward, will be found to be a most useful handbook for those visiting the vicinity on which it deals; but apart from this it affords excellent reading. A plan of the map of the district and several half-tone illustrations embellish this book.

"PHOTOGRAPHY ANNUAL FOR 1897." London: Iliffe and Son, 2s. 6d. net. With each year this annual makes its regular appearance, always full of matters of interest to the photographic worker. The book is divided into sections, of which there are seven, including tables for reference, lists of photographic societies, practical articles, records of progress, novelties, directories, etc. There are also several excellent illustrations.

PATENT INTELLIGENCE.

The following List, relating to current Patent Applications, is compiled expressly for the "Optical Magic Lantern Journal" by W. P. Thompson & Co., Patent Agents, of 322, High Holborn, London, W.C., to whom all enquiries for further information should be addressed.

No. RECENT PATENT APPLICATIONS.

16789. 15th July, 1897. A. L. Curtis. A method of producing moving pictures.

16793. 15th July, 1897. O. V. Sigurdsson. Improvements in means employed in the manufacture of acetylene gas.

16960. 17th July, 1897. C. W. Cowan and D. Iles. Improvements in and relating to the production and exhibition of representations of pictures, advertisements, and the like. Complete.

16975. 17th July, 1897. G. C. Marks (A. F. Bourers, France). Improvements in apparatus for the generation of acetylene. Complete.

17021. 19th July, 1897. E. Godia. Improvements in acetylene gas generators. Complete.

17098. 20th July, 1897. C. S. Hastings. Improvements in or relating to optical erecting apparatus. Complete.

17248. 21st July, 1897. A. Darling and A. Wrench. Improvements relating to cinematographic apparatus.

17336. 22nd July, 1897. C. W. Cowan, D. Iles, A. Cruickshank, and C. Hindle. Improvements in and relating to screens for displaying and exhibiting pictures, advertisements, and the like.

17438. 24th July, 1897. A. Sweetser. Improvements in optical lanterns.

17448. 24th July, 1897. R. F. Carter. Improved apparatus for the production and storage of acetylene gas. Complete.

17482. 24th July, 1897. N. Reggiani and A. Chrisini. Improvements in acetylene gas generators. Complete.

17565. 27th July, 1897. E. Sandow. Improvements in or relating to the production and exhibition of the pictures of moving objects.

17632. 27th July, 1897. J. Joly. An improvement in changing backs for use in colour screen-photography.

17735. 28th July, 1897. L. N. Kamm. Improvements in apparatus for photographing and exhibiting cinematographic pictures.

17793. 29th July, 1897. J. G. A. Kitchen. Improvements in or connected with acetylene generators.

17803. 29th July, 1897. E. P. Allam, G. C. Calvert, and J. Fleming. Improvements in apparatus for projecting photographic and other pictures.

17893. 30th July, 1897. G. P. Spooner. Improvements in or relating to jets for limelights.

18355. 5th August, 1897. J. C. Bull (Josse and Defay's, France). Improvements in and relating to the manufacture of acetylene gas

18528. 10th August, 1897. J. B. Lavour. Improvements in acetylene gas generators.

18610. 11th August, 1897. B. Drittler and M. Erlanger. Improvements in apparatus for quickly turning over a series of photographs or drawings attached to a revolving cylinder. Complete.

18701. 12th August, 1897. G. Davenport. An improved electric arc lamp for projection and other purposes.

18744. 12th August, 1897. Sir C. S. Forbes, Bart. Improvements in or connected with acetylene lamps.

18745. 12th August, 1897. Sir C. S. Forbes, Bart. Improvements in generators for acetylene gas.

SPECIFICATIONS PUBLISHED.

Copies of the following specifications may be obtained by remitting 1/- for each specification to W. P. Thompson & Co., Patent Agents, 322, High Holborn, London, W.C.

17646 of 1896. Duffield. Acetylene gas generator.

16301 of 1896. Sandow. Means for producing pictorial effects upon a vertical screen or similar surface.

172224 of 1896. Friese-Greene and Prestwich. Means for taking and reproducing kinetoscopic pictures.

20074 of 1896. Gaskell and Gibbs. Generation and storage of acetylene.

21351 of 1896. Kay. Acetylene.

17049 of 1896. Harrison and Harrison. Taking photographs in quick succession, and projecting them on the screen.

17881 of 1896. Wrench. Cinematographs.

19955 of 1896. Hart. Projecting apparatus for exhibiting pictures, advertisements, and the like.

20346 of 1896. Hudlass. Slide carriers for optical lanterns.

24414 of 1896. Smith and Smith. Automatic acetylene gas generator.

23183 of 1896. Mills (Lumiere and Lumiere). Apparatus for the direct viewing of chromo-photographic or zoetropic pictures.

11133 of 1897. Selle. Photographic dark backs for successive exposures in colour photography.

12921 of 1897. Porter. Apparatus for viewing stereoscopic, etc., pictures.

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Correspondence.

PROFESSOR MALDEN'S EFFECT SLIDES.

To the Editor.

DEAR SIR,—On reading this journal for August, I found my name mentioned in connection with Mr. C. W. Locke, and I ask you, in common fairness, to kindly allow me to give you my version of the matter.

It is stated that previous to his engagement by me, "he had had considerable magic lantern experience; he had used a pair of toy lanterns, and afterwards improved himself at home with a larger pair."

I advertised for an assistant who had mechanical tastes and was handy with tools. Mr. Locke applied. He was then in the coach-building line at Aldershot, and knew practically nothing of the oxy-hydrogen light or public exhibitions; but in one month I instructed him in all the mystery of oxygen making, getting up the lights, working effects, and registering slides. At this time I was lecturing (and had been for some years) at the Royal Polytechnic. My first triple had just come home—not "suggested" by me, but made from my own working drawings by J. H. Steward, and duly registered as the "Malden Trinopticon."

With this instrument to practice upon, Mr. Locke soon became a smart manipulator.

With regard to the effects and mechanical contrivances exhibited by me, "emanating" from him, this I most emphatically deny. With the exception of the trains running into and out of Cannon Street, all the effects mentioned were invented and designed by me, and from my drawings and instructions worked out by him in a clever way. I grant if he had not been a good mechanician, I should not have retained him so many years.

Thanking you in anticipation for inserting this letter,

I am, dear Sir,

Yours very truly,

B. J. MALDEN.

"Tremere,"
Alexandra Road,
Finsbury Park.
August 11th, 1897.

ACETYLENE GAS REGULATIONS RELAXED.

To the Editor.

Sir,—Many of your readers will be glad to hear that the stringent regulations issued by the Home Office and London County Council last April have at last been modified, and that now as much as 5 lbs. of calcium carbide can be kept on any premises without a licence, provided that it is stored in tins containing not more than 1 lb. each. The fire insurance companies will now allow 4 lbs. of calcium carbide and a portable generator on insured buildings, so that the lanternist and photographer can therefore once more breathe freely, and judging by last year's results there is no doubt that lanternists and dealers should look out for good patterns of acetylene generators before the season is upon us.

Take care that the generator you order does not store the gas at a greater pressure than 1 or 2 ounces to the square inch, as that is sufficient for lighting with acetylene on any scale. A safety valve should also be fitted, also a cooling and condensing chamber, and some arrangement for expelling all air from the gas receiver so as to avoid any explosive mixture at starting; above all, an expandable gas holder is necessary. The best generators are those on the automatic principle.

Yours truly,

CHAS. HINE.

—:o:—

Notes and Queries.

Notts.—You will find it a difficult matter to obtain a superior light by means of oil than the lamp you possess. Next in turn will come acetylene gas. You speak of being nervous of using the limelight, but there is no necessity for this; just make a commencement and you will be surprised at the ease of working. Get a small cylinder of oxygen and a blow-through jet, attach the hydrogen side to the house gas supply and spend half an hour with the jet on a table before putting it in the lantern, and all your fears will vanish. If you have no house gas laid on, then get a cylinder of same as well, and a mixed jet; there is no danger, light the hydrogen side and gradually turn on the oxygen, try various adjustments of pressure, and you will soon feel at home with it. We know nothing more of the gas mentioned than what appeared in this journal. You would find it exceedingly expensive to generate the electricity as it is used.

B asks how to make sensitised albumenised paper keep, as he cannot make it keep good more than a few hours. *Ans.*—Start in the usual way with a 60 grain silver bath and float for two or three minutes, then draw the paper over a glass rod to remove excess of solution—the bath can be worked down to about 45 grains to the ounce before strengthening. Now for the keeping part—make a solution of washing soda, 2 or 3 ounces to 1 pint of water, and into this dip sheets of white blotting paper; these must be allowed to become quite dry. When the sensitised paper is merely surface dry and just commencing to curl, each sheet is placed between two sheets of the soda paper, which should be a little larger than the sheet of albumen paper. Pile all up in this manner and place a weight on top to keep in contact.

Horne and Thoddle.—We have already one letter on the subject, and even previous to receiving this had the information in type.—Thanks.

Geo. Cook.—The writer of the article in question is away for a fortnight, but on his return your letter will be forwarded to him.

Time.—(1) The white paper can be obtained at any large dealers in wall-paper. (2) Fleet Street, London, E.C., is quite sufficient to find the firm you enquire about. (3) Mr. A. R. Schutz, 21, Ann Street, Worthing.

Albert Lawson.—To repair a bag in the condition you speak of is no easy matter, but you might try rubbing in some rubber solution when it is distended as much as possible, this will leave it in a very sticky condition, but the application of french chalk in powder will obviate this.

Seeker after knowledge asks:—What is compound oxygen which is greatly advertised in America? *Ans.*—We understand it to be a trade name for some medicine for the cure of catarrh, asthma, consumption, and bronchitis, but know nothing further of it, but you can rest assured it is nothing new for the use of lanternists, unless it be from a medical point of view.

A. B. C.—(1) The style you suggest for a screen will answer, but in next Annual you will find a still better suggestion by Mr. Sprange. (2) This also will be given, with illustrations, in our Annual. (3) From Avery and Co., of Great Portland Street, London, W. They make a speciality of blinds and such like. (4) Methylated ether. (5) Yes, if the saturator is properly constructed.

Geo. Hilyer.—Dalton Manufacturing Co., 12, Norfolk Street, Ardwick, Manchester.

Paddy Flynn writes:—(1) Having seen in a paper that "Castor oil added to illuminating oil wonderfully increases the brilliancy of the flame" could any reader kindly give proportions for same, and if it would be suitable for magic lantern work. (2) Inform me if opaque lantern screens have very great advantages over the ordinary calico screens, if so, could a handy man make one, and how is it done? *Ans.*—(1) If any of our readers have had any experience with this, will they kindly supply the information. (2) Yes, see this journal for September, 1896, page 138.